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FEE TRANSMITTAL
For FY 2006

☑ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 250.00

Complete if Known	
Application Number	09/917,412
Filing Date	28 July 2001
First Named Inventor	Lan Ngoc Vu
Examiner Name	M. Pollack
Art Unit	2145
Attorney Docket No.	JWO003-00

METHOD OF PAYMENT (check all that apply)

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1. BASIC FILING, SEARCH, AND EXAMINATION FEES

	FILING FEES		SEARCH FEES		EXAMINATION FEES		
		Small Entity		Small Entity		Small Entity	
Application Type	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fees Paid ($)
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee ($)	Small Entity Fee ($)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims _____ - 20 or HP = _____ x _____ = Fee Paid ($) _____
HP = highest number of total claims paid for, if greater than 20.

Indep. Claims _____ - 3 or HP = _____ x _____ = Fee Paid ($) _____
HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims: Fee ($) _____ Fee Paid ($) _____

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets _____ - 100 = _____ / 50 = _____ (round up to a whole number) x Fee ($) _____ = Fee Paid ($) _____

4. OTHER FEE(S)

Fees Paid ($)

Non-English Specification, $130 fee (no small entity discount) _____

Other (e.g., late filing surcharge): Appeal Brief Filing Fee (Fee Code 1402) $250.00

SUBMITTED BY

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$AF/2145

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Lan Ngoc Vu
Serial No.: 09/917,412
Filed: 28 July 2001
For: System and Method for Multi-Tier Multi-Casting Over the Internet

15 May 2006

Art Unit: 2145
Examiner: M. Pollack

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Jeffrey Van Myers — 15 May 2006 (Date)

Brief on Appeal

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1. Real parties in interest (37 C.F.R. § 41.37 (c) (l) (i)).

The sole inventor, Lan Ngoc Vu ("Applicant"), has assigned all right, title and interest in and to the present application ("Application"). Accordingly, the real party in interest in this appeal is Web Office, Inc, a corporation organized under the laws of the State of Texas, having its principal place of business at 9211 Waterford Centre Blvd., Suite 250, Austin, TX 78758.

2. Related appeals and interferences (37 C.F.R. § 41.37 (c) (1) (ii)).

Applicant is not aware of any appeals or interferences that will directly affect, or be directly affected by, or have a bearing on, the Board's decision in this appeal.

3. Status of claims (37 C.F.R. § 41.37 (c) (1) (iii)).

The Application, as filed, had eight (8) claims (claims 1-8). Claims 7 and 8 have been canceled. There are six (6) claims presently pending in the application (claims 1-6). Claims 1-6 are presently being appealed.

4. Status of amendments (37 C.F.R. § 41.37 (c) (1) (iv)).

All amendments filed subsequent to final rejection have been entered.

5. Summary of claimed subject matter (37 C.F.R. § 41.37 (c) (1) (v)).

The following summary is provided to give the Board the ability to conveniently review particular embodiments of the claims on appeal as described in the Application, but this summary is not intended to limit the scope of the claimed invention.

In the Application's specification ("Specification"), Applicant has "*italicize[d]* the first occurrence of each special term of art which should be familiar to those skilled in the art of network communication systems." (See, Specification, page 1, lines 18-20.) One such term was "*multi-casting*". (See, Specification, page 2, line 22.) Accordingly, Applicant's claims 1-6, incorporating as each does the term "multi-casting" or "multi-cast", are expressly limited to that application. As explained in the Application, "*multi-casting* [is] used for simultaneously deliver[ing], *point-to-multi-point*, the same content to multiple clients." (See, Specification, page 2, lines 22-24.) As also explained in the Application, multi-casting is typically used to simultaneously cast live content in a continuous stream from the content server to all subscribed clients. (See, Specification, page 4, line 25, through page 5, line 3.)

In independent claim 1, a system for multi-tier multi-casting via a public communication network 6 is claimed. This system is comprised of three distinct functional units: (i) a content server 4 adapted to multi-cast predetermined content via the public communication network 6, wherein the content server 4 comprises a first tier; (ii) a first client server 12 adapted to receive the content multi-cast by the content server 4 via the public communication network 6, and to multi-cast the received content via a first private communication network (not expressly enumerated in Fig. 1, but comprising the network connections between the first client server 12 and the set of clients_j through client_r generally within the illustrated business site 10), wherein the first client server 12 comprises a second tier; and (iii) a first client (any of client_j through client_r) adapted to receive the content multi-cast by the first client server 12 via the first private communication network. In dependent claim 2, a second client server (not separately

enumerated but equivalent to first client server 12) provides multi-cast rebroadcast of content provided by the content server 4 to a second client (not separately enumerated but equivalent to any of client_j through client_r). In dependent claim 3, a second client (not separately enumerated but equivalent to any of client_j through client_r) is added to the second private communication network so as to receive the multi-cast rebroadcast by the second client server of content provided by the content server 4. In dependent claim 4, a third client (not separately enumerated but equivalent to any of client_j through client_r) is added to the first private communication network so as to receive the multi-cast rebroadcast by the first client server of content provided by the content server 4. In each of claims 1-4, the content server 4 is aware of, and multi-casts directly to, only the client server(s); conversely, each client is aware of, and receives multi-cast content from, only the respective client server. In this system, the content server 4 is relieved by each client server 12 of the bandwidth required to service each of the latter's clients, especially with respect to transmission errors (see, Specification, page 9, lines 20-30, and Fig. 4). In addition, each client server 12 can independently provide locally enhanced services such as time-shifting (see, Specification, page 8, lines 17-28, and page 9, lines 13-19), whereby, for example, a multi-cast session originating during normal business hours in one time zone can be re-multi-cast during normal business hours of a different time zone half-way around the world.

In independent claim 5, a method for multi-tier multi-casting via a public communication network 6 is claimed. This method is comprised of three distinct steps: (i) multi-casting predetermined content via the public communication network 6 (see, Specification, page 7, line 18, through page 8, line 10); (ii) receiving the content multi-cast via the public communication network 6, and multi-casting the received content via a first private communication network (see, Specification, page 8, lines 11-10); and (iii) receiving the content multi-cast via the first private communication network. The details of the claimed method are illustrated in flow diagram form in Figs. 3-5, and described in the Specification from page 8, line 29, through page 10, line 13. In dependent claim 6, the method of claim 5 is enhanced to include the ability to: (i) receive the content multi-cast via the public communication network 6, and multi-cast the received content via a second private communication network (not separately enumerated but equivalent to the first private communication network); and (ii) receive the content multi-cast via the second private communication network. In each of claims 5 and 6, the source of the original content is aware of, and multi-casts directly to, only those "public" recipients connected directly to the public communication network; conversely, each "private" recipient is aware of, and receives multi-cast content from, only the respective public recipient. In accordance with this method, the content source (*e.g.*, the content server 4) is relieved by each public recipient (*e.g.*, client server 12) of the bandwidth required to service each of the private recipients (*e.g.*, any of client_j through client_r), especially with respect to transmission errors (see, Specification, page 9, lines 20-30, and Fig. 4). In addition, each public recipient (*e.g.*, client server 12) can independently provide enhanced services such as time-shifting (see, Specification, page 9, lines 13-19).

6. Grounds of rejection to be reviewed on appeal (37 C.F.R. § 41.37 (c) (1) (vi)).

Claims 1-6 were finally rejected in the Office Action dated 2 September 2004 (Paper 6 -- "Action") under 35 U.S.C. § 102 (e) as being anticipated by Huang, *et al.*, U.S. Patent No. 6,292,835 ("Huang").

With respect to claims 1 and 5, the Examiner has asserted:

> "Huang teaches a method and system (abstract) for multi-tier multi-casting via a public communication network (col. 1, line1 - col. 3, line 25), comprising:
>
> "a. A content server (Fig. 1, #108) adapted to multi-cast predetermined content (col. 4, lines 3-5) via the public communication network (Fig. 1, #111), wherein the content server comprises a first tier (Fig. 1; S);
>
> "b. A first client server (Fig. 1, #105) adapted to receive the content multi-cast by the content server via the public communication network (col. 4, lines 20-30), and to multi-cast the received content (col. 4, lines 28-45) via a first private communication network (Fig. 1, #110), wherein the first client server comprises a second tier (Fig. 1; P); and
>
> "c. A first client (Fig. 1, #101) adapted to receive the content multi-cast by the first client server via the first private communication network (col. 4, lines 28-45)." (See, Action, page 5, lines 1-11.)

With respect to claims 2 and 6, the Examiner has asserted:

> "Huang teaches that the method and system further comprises:
>
> "a. A second client server adapted to receive the content multi-cast by the content server via the public communication network, and to multi-cast the received content via a second private communication network, wherein the first and second client servers comprises said second tier (col. 4, lines 18-21); and
>
> "b. A second client adapted to receive the content multi-cast by the second client server via the second private communication network (Fig. 1, #102)." (See, Action, page 5, lines 12-18.)

With respect to claim 3, the Examiner has asserted that "Huang teaches a third client adapted to receive the content multi-cast by the second client server via the second private communication network (Fig. 1, #103)." (See, Action, page 5, lines 19-20.)

With respect to claim 4, the Examiner has asserted that "Huang teaches a fourth client adapted to receive the content multi-cast by the first client server via the first private communication network (Fig. 1, #104)." (See, Action, page 5, lines 21-22.)

7. Argument (37 C.F.R. § 41.37 (c) (1) (vii)).

In the Action, the Examiner rejected claims 1-6 under 35 U.S.C. § 102 (e) as being anticipated by Huang. In support of this rejection, the Examiner has asserted that the on-demand, point-to-point content delivery method of operation of Huang is "multi-casting".

If, as Applicant respectfully submits, this assumption is incorrect, then the rejection of claims 1-6 is without support and should be overruled by the Board.

7.1. Multi-casting is quite different from uni-casting.

In the Action, the Examiner has asserted that "Huang teaches a method and system (abstract) for multi-tier multi-casting via a public communication network", citing in support of such assertion Huang, col. 1, line 1 - col. 3, line 25. Applicant respectfully disagrees with such assertion in that there is no suggestion, much less teaching, in Huang relating to *multi-casting*, whether single-tier or multi-tier.

As noted in Section 5, above, Applicant has chosen to be his own lexicographer by expressly incorporating a number of definitions into the introductory portions of the present application. In particular, Applicant has declared that, in the context of the invention claimed in this Application, "*multi-casting* [is] used for simultaneously deliver[ing], *point-to multi-point* [sic], the same content to multiple clients." (See, Specification, page 2, lines 22-24.) As explained in the present application, multi-casting is typically used to simultaneously cast live content in a continuous stream from the content server to all subscribed clients. (See, Specification, page 4, line 25, through page 5, line 3.) Applicant's definition, and consistent use of, the term "multi-casting" is in conformance with industry standards:

Wikipedia, a popular on-line encyclopedia, first describes "unicast" as follows:

> "In computer networks, **unicast** is the sending of information packets to a single destination. 'Unicast' is derived from the word **broadcast**, as unicast is the extreme opposite of broadcasting. In computer networking, **multicasting** is used to regain some of the efficiencies of broadcasting."
>
> http://en.wikipedia.org/wiki/Unicast

then describes "multicast" as follows:

> "Multicast is the delivery of information to a group of destinations simultaneously using the most efficient strategy to deliver the messages over each link of the network only once and only create copies when the links to the destinations split."
>
> http://en.wikipedia.org/wiki/Multicast

In Webopedia, another on-line encyclopedia, "unicast" is defined as follows:

> "Communication that takes place over a network between a single sender and a single receiver."
>
> http://www.webopedia.com/TERM/U/unicast.html

whereas, "multicast" is defined as follows:

> "To transmit a single message to a select group of recipients. A simple example of multicasting is sending an e-mail message to a mailing list. Teleconferencing and videoconferencing also use multicasting, but require more robust protocols and networks.

"Standards are being developed to support multicasting over a TCP/IP network such as the Internet. These standards, IP Multicast and Mbone, will allow users to easily join multicast groups.

"Note that multicasting refers to sending a message to a select group whereas broadcasting refers to sending a message to everyone connected to a network." (Note: links are also provided for instructive white papers by 3COM and Cisco.)

http://www.webopedia.com/TERM/M/multicast.html

The Linux Documentation Project (generally referred to as "TLDP"), a leader in the field of open source software, describes "multicast" as follows:

"Multicast is... a need. Well, at least in some scenarios. If you have information (a lot of information, usually) that should be transmitted to various (but usually not all) hosts over an internet, then Multicast is the answer. One common situation in which it is used is when distributing real time audio and video to the set of hosts which have joined a distributed conference.

"Multicast is much like radio or TV in the sense that only those who have tuned their receivers (by selecting a particular frequency they are interested on) receive the information. That is: you hear the channel you are interested in, but not the others."

They then go on to explain, in detail, "The problem with Unicast".

http://www.tldp.org/HOWTO/Multicast-HOWTO-1.html#ss1.1

In an *Introduction to Multicasting*, the Networks and Telecommunications Research Group in the Department of Computer Science at Trinity College, Dublin, Ireland, states:

"Most high-level network protocols (such as the ISO Transport Protocols or TCP or UDP) only provide a unicast transmission service. That is, nodes of the network only have the ability to send to one other node at a time.

"All transmission with a unicast service is inherently point-to-point. If a node wants to send the same information to many destinations using a unicast transport service, it must perform a replicated unicast, and send N copies of the data to each destination in turn.

"A better way to transmit data from one source to many destinations is to provide a multicast transport service. With a multicast transport service, a single node can send data to many destinations by making just a single call on the transport service ... ."

http://ntrg.cs.tcd.ie/undergrad/4ba2/multicast/

7.2. Huang does <u>not</u> multi-cast.

Despite the Examiner's continued assertions to the contrary, Applicant respectfully submits that nothing in Huang either teaches or suggests that the content updating process

described therein can be used to simultaneously deliver the same content to multiple clients. By equating "object pushing" with "multi-casting", the Examiner has ignored several distinctive differences between these technologies, especially the simultaneity aspect. Huang describes "object pushing" as follows:

> "Traditionally, object retrieval on the web is based on pull technology. In this approach, a web user retrieves a web object by clicking an icon or a hyperlink through a web browser, which then establishes a network connection to a web content provider and proceeds to download and display the requested object. If the requested information is retrieved through a slow network, a noticeable latency may occur at the user end. To avoid the long wait for pulling the requested documents, an alternative is to have the server push the information to the users based on pre-specified user preferences or profiles as soon as relevant information becomes available. The users therefore receive the requested information without having to wait. **Currently, most push technologies are based on background pull where a software application, executing on behalf of the user, periodically pulls the requested objects in the background.**
>
> "In ... object pushing in WWW ..., as well as other systems that require data be continually sent from the servers to the clients, an important consideration is when and how often the client contents are updated. Ideally, one would like the client contents to be updated whenever their corresponding server data changes. However, this is impractical as frequent updates from a large number of clients may demand a very high network bandwidth capability not available in most organizations that run the relevant systems such as object pushing on web or data replication in distributed databases. **In practice, most of these systems adopt a default periodical update mechanism in which each client sets beforehand fixed update schedules, one for each server it subscribed to. In addition, many of these systems also provide a demand-driven update mechanism such that a client can immediately request an update from a certain server if an urgent need arises.**
>
> "While the pure demand-driven update scheme can be too costly in terms of bandwidth usage, the regularly scheduled updates provide flexibility in preserving bandwidth. However, it may be important for clients to set an appropriate update frequency for each server to which they are subscribed. If the frequency is too high, network bandwidth may be overflowed with the update traffic; if the frequency is too low, the information maintained by the clients may become too outdated. In the case of object push in WWW, it has been found that users tend to inadequately specify their preferences for updates with high frequencies such that many corporate gateways are often flooded with push traffic.
>
> "To alleviate this push overflow problem, push product vendors have developed proprietary proxy server software. In general, these proxy servers cache recently retrieved push objects. For each push request, these proxy servers desirably search their cache for the requested objects. If an

object is found in the cache, that object is sent back to the user who made the request. If an object is not found in cache, or if the found object is considered too old, **these proxy servers may relay a background pull to the original content provider to retrieve the requested object via corporate gateways**. This approach can improve the gateway traffic because some client **requests** will involve only the **retrieval** of information from the proxy server's cache, and the number of cross-gateway update requests will decrease as a result.

"In this proxy approach, the proxy **updates** have replaced the client updates in direct contact with the servers, and **it is the proxy's responsibility to keep the contents stored in their caches up to date in order to reflect the new changes from the servers**. When more corporate users are subscribing to the increasing number of channels that publish push objects (as is the current trend), the proxy-based update traffic can still flood the gateways if it does not take into consideration the gateway traffic condition. The same analogy can also be applied to the problem of periodical data replication beyond local gateways in a distributed database system." (Huang, col. 1, line 59 - col. 3, line 5.) (**Emphasis added.**)

"In a conventional proxy-based object pushing or data replication system, a proxy caches one newest copy for each object that the proxy received from the servers. Aside from the objects themselves, the proxy typically keeps meta information for each cached object which indicates when the object was created. This information tells the proxy how current each cached object is. **Upon receiving an update request from a client, the proxy searches its cache. If the requested object is found in the cache, the proxy determines the currency of the object based on the creation time of the cached object. If the proxy determines the found object is current enough, this object is returned to the client who made the update request without incurring update traffic across the gateway. If the proxy determines that the found object is too outdated, or if the requested object is not located within the proxy's cache, then the proxy sends an update request to the corresponding server through the gateway on behalf of the requesting client. When the server sends back the requested object to the proxy, the proxy replaces the older copy of this object (if it exists) with the new one in its cache, updates the meta information (such as creation time) associated with this object, and also sends a new copy to the requesting client**." (Huang, col. 4, lines 22-44.) (**Emphasis added**.)

As is clear from the above, Huang's system does not employ multi-casting because, if it did so, updating would be wholly unnecessary -- the essence of multi-casting is that all recipients are simultaneously receiving CURRENT contents.

Another concept, important in Huang but irrelevant in multi-casting, is subsetting:

> "Each server 107-109 is a data source that manages a set of dynamically changing information which can be of any of the multimedia types (e.g., text, binary file, image, audio and video clip). **Each client 101-104 maintains subsets of information from one or more server data sources. In order to keep its information up to date, each client 101-104 sends update requests periodically to the servers where this clients information was originated**. These update requests however do not go to the corresponding servers directly. Instead, they go through proxy 105 which serves as an intermediary between clients 101-104 and servers 107-109. Proxy 105 determines if client update requests should be relayed to corresponding servers or if potentially older copies of the requested objects cached previously by the proxy should be transmitted to clients making update requests." (Huang, col. 4, lines 2-17. **Emphasis added**.)

Since Huang envisions each client being interested in only a unique subset of available channel information, multi-casting the full content to every client just for selective extraction would be a huge waste of communication bandwidth, computational power, and storage capacity.

Yet another concept, essential to multi-casting but unsolved by Huang, is simultaneity:

> "From a client's point of view, the highest currency of an object at the client end can be achieved by the proxy servicing an update request every time the server updates its corresponding object (i.e., the proxy update schedule matches the server update schedule exactly). If the gateway (or in general the network) bandwidth availability discourages such frequent updates, as is usually the case, then the proxy may skip some server updates and may, instead, return less up-to-date copies of objects to the requesting clients in-between two consecutive proxy updates. **In accordance with an exemplary embodiment of the present invention, a method is deployed to measure state of being out-of-date for objects received from the proxies to the clients.** Furthermore, an objective function is formulated, based on the measured out-of-date status of objects received by the clients, to compute a proxy update schedule for each channel by minimizing the overall out-of-date degree. The formulated objective function is then solved by known techniques." (Huang, col. 5, lines 47-64.) (**Emphasis added**.)

Rather than provide some method or system for receiving and relaying to all clients a stream of current information in "real time", *i.e.*, as it is being multi-cast by a content server, Huang offers, at best, a scheme to compute, using a "formulated objective function", a proxy update schedule for retrieving only selected bits and pieces of the total available content, for subsequent relay, on demand, to particular requesting clients. Thus, in Huang, multi-casting is used in neither tier, server-to-proxy or proxy-to-client.

In the Action, the Examiner has asserted that Huang's Dynamic Update process is equivalent to multi-casting. (Action, page 3, lines 5-8.) However, this process relates primarily to dynamically-modifying the update schedule based on certain system parametrics:

> "Dynamic update procedure 207 can be dynamically invoked by a proxy to process proxy updates for channels with high user interest before their respective next scheduled proxy updates." (Huang, col. 5, lines 19-22.)
>
> "An alternative embodiment of the present invention contemplates a procedure that allows a proxy to, based on client interests and available bandwidth, dynamically update channels before their respective next scheduled proxy updates." (Huang, col. 9, lines 14-17.)

However, the actual update process is wholly conventional:

> "Finally, the proxy perform a dynamic update for each of the selected channels (805)." (Huang, col. 10, lines 15-16.)

Taking all this into consideration, Applicant respectfully submits that Huang's proxy operates in a conventional *point-to-point* mode to: (i) locally "cache" copies of "subsets" of larger objects maintained on remote servers; (ii) provide requested portions of the cached content in response to client-generated demands; and, (iii) "update" the cached copies according to a set of predetermined "obsolescence" rules. While Huang may be advantageously used to maintain local coherency with a slowly changing content base, such as a Lotus Notes database, it is neither adapted to, nor intended to, maintain local synchronicity with a continuously changing content stream. In that Huang "pulls" new content either on a particular schedule or in response to client "demand", it is simply not adapted to perform even uni-casting, much less multi-casting.

7.3. Claim 1 is not anticipated by Huang under 35 U.S.C. §102 (e).

Claim 1 is not anticipated by Huang under 35 U.S.C. §102 (e) for the following reasons:

a. The Huang system, as disclosed, cannot multi-tier *multi-cast* via a public communication network (Application, claim 1, lines 1-2);

b. The Huang servers 107-109, as disclosed, are not adapted to *multi-cast* predetermined content via the public communication network, wherein each server comprises a first tier (Application, claim 1, lines 3-5);

c. The Huang proxy 105, as disclosed, is not adapted to receive the content *multi-cast* by the servers via the public communication network, and to *multi-cast* the received content via a first private communication network, wherein this first proxy comprises a second tier (Application, claim 1, lines 6-9); and

d. The Huang clients 101-104, as disclosed, are not adapted to receive the content *multi-cast* by the first proxy via the first private communication network (Application, claim 1, lines 10-11). (*Emphasis added.*)

7.4. Claim 2 is not anticipated by Huang under 35 U.S.C. §102 (e).

Claim 2 is not anticipated by Huang under 35 U.S.C. §102 (e) for the following reasons:

a. The Huang proxy 105, as disclosed, is not adapted to receive the content *multi-cast* by the servers via the public communication network, and to *multi-cast* the received content via a second private communication network, wherein the first proxy and this second proxy comprises a second tier (Application, claim 2, lines 2-5); and

b. The Huang clients 101-104, as disclosed, are not adapted to receive the content *multi-cast* by the second proxy via the second private communication network (Application, claim 2, lines 6-7). (*Emphasis added.*)

7.5. Claim 3 is not anticipated by Huang under 35 U.S.C. §102 (e).

Claim 3 is not anticipated by Huang under 35 U.S.C. §102 (e) for the following reason:

a. The Huang clients 101-104, as disclosed, are not adapted to receive the content *multi-cast* by the second proxy via the second private communication network (Application, claim 3, lines 2-3). (*Emphasis added.*)

7.6. Claim 4 is not anticipated by Huang under 35 U.S.C. §102 (e).

Claim 4 is not anticipated by Huang under 35 U.S.C. §102 (e) for the following reason:

a. The Huang clients 101-104, as disclosed, are not adapted to receive the content *multi-cast* by the first proxy via the first private communication network (Application, claim 4, lines 2-3). (*Emphasis added.*)

7.7. Claim 5 is not anticipated by Huang under 35 U.S.C. §102 (e).

Claim 5 is not anticipated by Huang under 35 U.S.C. §102 (e) for the following reasons:

a. The Huang method, as disclosed, does not multi-tier *multi-cast* via a public communication network (Application, claim 5, lines 1-2);

b. The Huang method, as disclosed, does not *multi-cast* predetermined content via the public communication network (Application, claim 5, line 3);

c. The Huang method, as disclosed, does not receive the content *multi-cast* via the public communication network, and *multi-cast* the received content via a first private communication network (Application, claim 5, lines 4-6); and

d. The Huang method, as disclosed, does not receive the content *multi-cast* via the first private communication network (Application, claim 5, line 7). (*Emphasis added.*)

7.8. Claim 6 is not anticipated by Huang under 35 U.S.C. §102 (e).

Claim 6 is not anticipated by Huang under 35 U.S.C. §102 (e) for the following reasons:

a. The Huang method, as disclosed, does not receive the content *multi-cast* via the public communication network, and *multi-cast* the received content via a second private communication network (Application, claim 6, lines 2-4); and

b. The Huang method, as disclosed, does not receive the content *multi-cast* via the second private communication network (Application, claim 6, lines 5-66). (*Emphasis added.*)

7.9. The Standard of Patentability Under 35 U.S.C. §102 (e).

With respect to the rejection of claims 1-6 as being anticipated by Huang, MPEP §2131 provides:

> "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. *Verdegaal Bros. v Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d

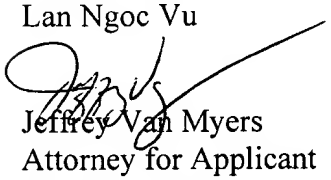
1051, 1053, (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claims."

Since, as Applicant has demonstrated above, "each and every element as set forth the claim[s]" are not "found, either expressly or inherently described in a single prior art reference", the rejection of claims 1-6 under 35 U.S.C. §102 (e), based on Huang, is not well founded. Accordingly, claims 1-6 are allowable over Huang under 35 U.S.C. 102 (e). Therefore, Applicant respectfully submits that claims 1-6 are allowable over the cited references under 35 U.S.C. §102 (e).

8. Conclusion.

For at least the reasons given above, the Applicant respectfully requests reconsideration and allowance of claims 1-6, and respectfully request that the pending patent application be promptly passed to issue.

Respectfully submitted,
Lan Ngoc Vu



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9. Claims Appendix (37 C.F.R. § 41.37 (c) (1) (viii)).

The text of each claim involved in the appeal is as follows:

1. (Original) A system for multi-tier multi-casting via a public communication network, comprising:

a content server adapted to multi-cast predetermined content via the public communication network, wherein the content server comprises a first tier;

a first client server adapted to receive the content multi-cast by the content server via the public communication network, and to multi-cast the received content via a first private communication network, wherein the first client server comprises a second tier; and

a first client adapted to receive the content multi-cast by the first client server via the first private communication network.

2. (Original) The system of claim 1 further comprising:

a second client server adapted to receive the content multi-cast by the content server via the public communication network, and to multi-cast the received content via a second private communication network, wherein the first and second client servers comprise said second tier; and

a second client adapted to receive the content multi-cast by the second client server via the second private communication network.

3. (Original) The system of claim 2 further comprising:

a third client adapted to receive the content multi-cast by the second client server via the second private communication network.

4. (Previously amended) The system of claim 1 further comprising:

a second client adapted to receive the content multi-cast by the first client server via the first private communication network.

5. (Original) A method for multi-tier multi-casting via a public communication network, the method comprising the steps of:

multi-casting predetermined content via the public communication network;

receiving the content multi-cast via the public communication network, and multi-casting the received content via a first private communication network; and

receiving the content multi-cast via the first private communication network.

6. (Original) The method of claim 5 further comprising:

receiving the content multi-cast via the public communication network, and multi-casting the received content via a second private communication network; and

receiving the content multi-cast via the second private communication network.